

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A wafer engine for moving semiconductor workpieces, comprising:
 - a linear drive assembly having a carriage, said linear drive assembly for moving said carriage between a first position and a second position along a first linear path, said first linear path defining an x-axis;
 - a support column having a first end, ~~and a second end, and a longitudinal central axis;~~
 - a rotational drive mounted to said carriage ~~and affixed to said first end of said support column,~~ said rotational drive having a portion affixed to said first end of said support column for rotating adapted to rotate said support column about a said longitudinal central axis of said support column, said longitudinal central axis defining a substantially vertical theta axis;
 - a z-axis drive housing ~~having~~ including a base portion having a first end and a second end and an elongated body extending upward from said second end of said base portion, said first end of said base portion mounted to said second end of said support column such that said rotational drive rotates said z-axis drive housing about said theta axis;
 - a z-axis drive assembly housed substantially within said elongated body, said z-axis drive assembly for moving vertically ~~adapted to move~~ between a first position and a second position along a second linear path, said second linear path defining a substantially vertical z-axis that is offset from said theta axis; and
 - a radial drive housing mounted to said z-axis drive assembly, said radial drive housing enclosing a radial drive assembly adapted to move an end effector between a first position and second position along a third linear path, said third linear path defining a radial axis.
2. (Previously Canceled)

3. (Previously Amended) The wafer engine as recited in claim 1, wherein said rotational drive simultaneously rotates said z-axis drive housing and said radial drive housing about said theta axis.
4. (Currently Amended) The wafer engine as recited in claim 1, wherein said ~~radial~~ rotational drive further includes an exhaust device.
5. (Currently Amended) The wafer engine as recited in claim 4, wherein said exhaust device draws air located within said elongated body, ~~through~~ said base portion and said support column and vents the air out of said exhaust device.
6. (Previously Amended) The wafer engine as recited in claim 1, wherein said radial drive housing is removably mounted to said z-axis drive assembly.
7. (Previously Amended) The wafer engine as recited in claim 6, wherein said radial drive housing includes at least one component selected from the group consisting of (i) an ID reader, (ii) a metrology tool, (iii) an aligner, (iv) a notch detector, (v) an edge detector, (vi) a wafer marking tool, (vii) a processing module, (viii) a wafer viewing, and (ix) an environmental control device.
8. (Previously Amended) The wafer engine as recited in claim 1, further including a fan/filter unit mounted to said radial drive housing, said fan/filter unit for drawing air into said radial drive housing and filtering the air before venting the air out of said radial drive housing.
- 9.-10. (Previously Canceled)
11. (Currently Amended) A wafer engine for transporting semiconductor wafers, comprising:
 - a first drive assembly providing motion between a first position and a second position along a first linear path, said first linear path defining an x-axis;
 - a support column having a first end and a second end;
 - a rotational drive mounted to said first drive assembly and having a portion affixed to said first end of said support column, said rotational drive being adapted to rotate said support column about a longitudinal central axis of said support column, said longitudinal central axis defining a theta-axis;

a substantially L-shaped z-axis drive housing having an elongated vertical body and a base portion ~~extending substantially perpendicular from said elongated vertical body and~~ affixed to said second end of said support column, said z-axis drive housing containing a z-axis drive assembly being adapted to move within said elongated vertical body along a second linear path, said second linear path defining a z-axis that is offset from and substantially parallel to said theta-axis;

a radial drive housing removably mounted to said z-axis drive assembly, said radial drive housing enclosing a radial drive assembly being adapted to move between a first position and a second position along a third linear path, said third linear path defining a radial axis; and

an end effector mounted to said radial drive assembly.

12. (Previously Canceled)

13. (Previously Amended) The wafer engine as recited in claim 11, wherein said radial drive housing includes at least one component selected from the group consisting of (i) an ID reader, (ii) a metrology tool, (iii) an aligner, (iv) a notch detector, (v) an edge detector, and (vi) a wafer marking tool.

14. (Previously Canceled)

15. (Cancel)

16-23. (Previously Canceled)

24. (Previously Added) The wafer engine recited in claim 1, wherein said theta axis does not intersect any portion of said radial drive housing.

25. (New) The wafer engine recited in claim 11, wherein said rotational drive further includes an exhaust device, said exhaust device drawing air located within said substantially L-shaped z-axis drive housing through said support column in order to vent the air out of said exhaust device.

26. (New) The wafer engine recited in claim 25, further including a fan/filter device mounted to said radial drive housing, said fan/filter device for drawing air into said radial drive housing and filtering the air before the air is vented back out of said radial drive housing.